 National Transportation Safety Board <b>FACTUAL REPORT</b> AVIATION		NTSB ID: DCA05MA037		Aircraft Registration Number: N500AT	
		Occurrence Date: 02/16/2005		Most Critical Injury: Fatal	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place Pueblo	State CO	Zip Code	Local Time 0913	Time Zone MST	
Airport Proximity: Off Airport/Airstrip		Distance From Landing Facility: 4			
Aircraft Information Summary					
Aircraft Manufacturer Cessna		Model/Series 560		Type of Aircraft Airplane	
Revenue Sightseeing Flight:			Air Medical Transport Flight:		
Narrative					
<p>Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:</p> <p>*** Note: NTSB investigators traveled in support of this investigation and used data obtained from various sources to prepare this aircraft accident report. ***</p> <p>The Safety Board's full report is available at <a href="http://www.nts.gov/publictn/publictn.htm">http://www.nts.gov/publictn/publictn.htm</a>. The Aircraft Accident Report number is NTSB/AAR-07/02.</p> <p>On February 16, 2005, about 0913 mountain standard time, a Cessna Citation 560, N500AT, operated by Martinair, Inc., for Circuit City Stores, Inc., crashed about 4 nautical miles east of Pueblo Memorial Airport (PUB), Pueblo, Colorado, while on an instrument landing system (ILS) approach to runway 26R. The two pilots and six passengers on board were killed, and the airplane was destroyed by impact forces and postcrash fire. The flight was operating under the provisions of 14 Code of Federal Regulations Part 91 on an instrument flight rules flight plan. Instrument meteorological conditions prevailed at the time of the accident.</p> <p>The accident flight and another Circuit City Stores Cessna 560 (N500FK, referred to in this report as the "sister ship") were scheduled to transport Circuit City Stores employees from Richmond International Airport, Richmond, Virginia, to John Wayne Airport, Santa Ana, California, with scheduled fuel stops at Columbia Regional Airport (COU), Columbia, Missouri, and PUB. The accident flight departed Richmond about 0600 eastern standard time. The flight arrived at COU about 0736 central standard time and departed for PUB about 30 minutes later.</p> <p>At 0847:48, while descending through about flight level 370, the cockpit voice recorder (CVR) recorded the Denver Air Route Traffic Control Center instructing the flight crew to descend to and maintain 13,000 feet. About 0851, the CVR recorded the flight crew start discussing the icing conditions. Specifically, at 0850:40, the captain stated, "I'm gonna heat 'em up." About 4 minutes later, the captain stated that he turned the windshield heat on, and he then asked the first officer to let him know if he saw any ice on the wing. The first officer replied that he saw ice "building a little bit right on the [wing] leading edge...it's not the real white ice like we had yesterday. It's more of a grayish." The first officer then stated, "there's a real thin line back there." About 2 minutes later, the captain stated that it did not look like the airplane had accumulated any more ice.</p> <p>At 0858:20, as the airplane was descending through about 18,000 feet, the first officer suggested that the captain cycle the deice boots. After cycling the deice boots, the captain stated, "might've gotten rid of a little but not much." At 0859:29, the first officer stated that the Vref was 96 knots. About 3 1/2 minutes later, the captain told the first officer to "leave the heats on," and the first officer replied, "okay. Got everything nice and warmed up."</p> <p>At 0905:50, the first officer contacted PUB approach control and stated, "Pueblo approach...thirteen thousand with [automatic terminal information service] Juliet." The PUB local controller instructed</p>					

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## FACTUAL REPORT

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## Narrative (Continued)


the flight crew to fly heading 240° for the ILS runway 26R final approach course and to descend to and maintain 7,000 feet. The first officer asked, "did you say two six right now?" The controller confirmed that runway 26R was in use. The controller also reported that a regional jet was in a holding pattern over PUB at 9,000 feet and asked the pilots to report when they had the airplane in sight. The first officer then told the captain that the controller had changed the landing runway from 8L to 26R.


At 0907:36, the PUB local controller asked the pilots if they had the airplane in sight, and the first officer stated that he did not. The controller replied, "give me a best rate of descent through nine thousand or maintain one zero thousand. I'll just turn you." The first officer stated that they would descend to 7,000 feet. At 0908:25, the first officer reported to the controller that the flight was in IMC at an altitude of about 9,400 feet. The controller then instructed the flight to turn left to a heading of 170°. At 0908:55, the controller instructed the flight crew to turn right to a heading of 290° to intercept the localizer inbound. He then instructed the flight crew to maintain 7,000 feet and cleared the flight for the approach.


At 0909:19, the first officer stated, "you got a little different ice on there now. It's clear." The captain replied, "yeah," and he then instructed the first officer to "open up those valves all the way." The first officer replied, "all right, will do." At 0909:41, the PUB local controller provided the flight crew with the current weather, which indicated the following: cloud ceilings broken at 900 feet and overcast at 1,400 feet, visibility 6 statute miles in mist, temperature 23° Celsius (C), dew point -4° C, wind 070° at 7 knots, and altimeter 30.16 inches of mercury.

At 0910:22, the first officer stated, "ignition is on with the anti-ice, now it's on for sure. Glideslope is alive." At 0911:10, the captain stated, "[landing] gear's down." The PUB local controller cleared the flight to land on runway 26R and instructed the flight crew to maintain its present heading and altitude until established on the ILS localizer. At 0911:45, the CVR recorded the captain stating, "speed brakes coming back out." The first officer replied, "okay...there's your glideslope intercept." The captain then called for full flaps. The first officer responded, "full flaps, here we go...full selected and indicated." At 0912:00, the first officer briefed the missed approach. Four seconds later, he stated, "you are plus twenty five," and the captain replied, "slowing." At 0912:37, the first officer stated, "I don't know if you want to run your ice a little bit. You got the Vref there."

Airplane performance calculations show that, about 0912:40, immediately after passing through about 6,100 feet, the airplane experienced an upset and the onset of a large roll to the left concurrent with a rapid decrease in pitch. The CVR recorded a short tone concurrent with the beginning of the upset. The frequency and the duration of the tone were consistent with the autopilot disconnect horn. At 0912:46, the CVR recorded the enhanced ground proximity warning system "bank angle" aural warning alert. The last radar return was received at 0912:54 while the airplane was at an altitude of about 4,922 feet. One second later, the CVR stopped recording. According to the Federal Aviation Administration air traffic control transcript, at 0912:57, the PUB local controller issued an altitude alert to the accident flight, stating, "zero alpha tango altitude alert altitude indicates four thousand nine hundred over."

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		Occurrence Type: Accident				
<b>Landing Facility/Approach Information</b>						
Airport Name Pueblo Memorial Airport		Airport ID: KPUB	Airport Elevation 4726 Ft. MSL	Runway Used 26R	Runway Length 10496	Runway Width
Runway Surface Type: Asphalt						
Runway Surface Condition:						
Approach/Arrival Flown: ILS						
VFR Approach/Landing:						
<b>Aircraft Information</b>						
Aircraft Manufacturer Cessna		Model/Series 560		Serial Number 560-0146		
Airworthiness Certificate(s): Normal						
Landing Gear Type: Retractable - Tricycle						
Amateur Built Acft?	Number of Seats:	Certified Max Gross Wt. 19000 LBS		Number of Engines: 2		
Engine Type: Turbo Fan	Engine Manufacturer: Pratt & Whitney Canada		Model/Series: JT15D-5A	Rated Power: 2900 LBS		
<b>- Aircraft Inspection Information</b>						
Type of Last Inspection Continuous Airworthiness	Date of Last Inspection 12/2004	Time Since Last Inspection 54.5 Hours		Airframe Total Time 3657.5 Hours		
<b>- Emergency Locator Transmitter (ELT) Information</b>						
ELT Installed?/Type Yes /		ELT Operated? Yes	ELT Aided in Locating Accident Site?			
<b>Owner/Operator Information</b>						
Registered Aircraft Owner  Circuit City Stores, Inc		Street Address				
		City Richmond	State VA	Zip Code		
Operator of Aircraft  Circuit City Stores, Inc		Street Address				
		City	State	Zip Code		
Operator Does Business As:			Operator Designator Code:			
<b>- Type of U.S. Certificate(s) Held: None</b>						
Air Carrier Operating Certificate(s):						
Operating Certificate:			Operator Certificate:			
Regulation Flight Conducted Under: Part 91: General Aviation						
Type of Flight Operation Conducted: Executive/Corporate						
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<b>First Pilot Information</b>																																																																																															
Name On File		City		State	Date of Birth Age 53																																																																																										
Sex: M	Seat Occupied: Left	Occupational Pilot?		Certificate Number:																																																																																											
Certificate(s): Airline Transport; Flight Instructor; Commercial																																																																																															
Airplane Rating(s): Multi-engine Land; Single-engine Land																																																																																															
Rotorcraft/Glider/LTA:																																																																																															
Instrument Rating(s): Airplane																																																																																															
Instructor Rating(s): Airplane Single-engine																																																																																															
Current Biennial Flight Review? 11/2004																																																																																															
Medical Cert.: Class 1		Medical Cert. Status: With Waivers/Limitations		Date of Last Medical Exam: 02/2005																																																																																											
<table border="1"> <thead> <tr> <th rowspan="2">- Flight Time Matrix</th> <th rowspan="2">All A/C</th> <th rowspan="2">This Make and Model</th> <th rowspan="2">Airplane Single Engine</th> <th rowspan="2">Airplane Multi-Engine</th> <th rowspan="2">Night</th> <th colspan="2">Instrument</th> <th rowspan="2">Rotorcraft</th> <th rowspan="2">Glider</th> <th rowspan="2">Lighter Than Air</th> </tr> <tr> <th>Actual</th> <th>Simulated</th> </tr> </thead> <tbody> <tr> <td>Total Time</td> <td>8577</td> <td>2735</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Pilot In Command(PIC)</td> <td>4452</td> <td>1500</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Instructor</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Instruction Received</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Last 90 Days</td> <td>113</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Last 30 Days</td> <td>39</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Last 24 Hours</td> <td>3</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>						- Flight Time Matrix	All A/C	This Make and Model	Airplane Single Engine	Airplane Multi-Engine	Night	Instrument		Rotorcraft	Glider	Lighter Than Air	Actual	Simulated	Total Time	8577	2735									Pilot In Command(PIC)	4452	1500									Instructor											Instruction Received											Last 90 Days	113										Last 30 Days	39										Last 24 Hours	3									
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Second Pilot? Yes																																																																																															
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<b>Weather Information</b>					
WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
KPUB	0853	MST	4725 Ft. MSL	3 NM	270 Deg. Mag.
Sky/Lowest Cloud Condition:				Ft. AGL	Condition of Light: Day
Lowest Ceiling: Broken			900 Ft. AGL	Visibility: 8 SM	Altimeter: 30.16 "Hg
Temperature: -3 °C	Dew Point: -5 °C	Weather Conditions at Accident Site: Instrument Conditions			
Wind Direction: 60	Wind Speed:	Wind Gusts:			
Visibility (RVR): Ft.	Visibility (RVV) SM				
Precip and/or Obscuration:					

<b>Accident Information</b>		
Aircraft Damage: Destroyed	Aircraft Fire: Ground	Aircraft Explosion: None

- Injury Summary Matrix	Fatal	Serious	Minor	None	TOTAL	
First Pilot	1				1	
Second Pilot	1				1	
Student Pilot						
Flight Instructor						
Check Pilot						
Flight Engineer						
Cabin Attendants						
Other Crew						
Passengers	6				6	
- TOTAL ABOARD -	8				8	
Other Ground						
- GRAND TOTAL -	8				8	

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	Occurrence Date: 02/16/2005	
	Occurrence Type: Accident	
Administrative Information		
Investigator-In-Charge (IIC) Frank Hilldrup		
Additional Persons Participating in This Accident/Incident Investigation:		
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